

## **APPENDIX 1**

### **Abstract**

The present invention describes a Pd-catalyst further contains La, Ti, Nb, K or Si. The Pd-catalyst has a high ethylene selectivity even after a low temperature reduction in the selective hydrogenation of acetylene to ethylene. The invention also relates to the production of the catalyst. A catalyst of the invention consists essentially of 0.05 to 2.0% by weight, based on the supported catalyst, of palladium and one or two metals chosen from the group consisting of lanthanum, niobium, titanium, potassium and silicon. The catalyst can be prepared by the following procedure.

- (1) Impregnating a support in aqueous solution of tetra amine palladium hydroxide, followed by drying and calcination;
- (2) The second and, if necessary, a third metal is impregnated by impregnating the Pd-catalyst in the solution of the metal precursor followed by drying and calcination;
- (3) The catalyst according to step (2) is then reduced in hydrogen at 200°C to 600°C for 1 to 5 hours.